

CLAIMS

1           1.     A method for active vaccination against autologous cells expressing  
2 transmembrane proteins comprising administering to a patient a vaccine composition  
3 comprising at least an immunogenic portion of the extracellular domain of the  
4 transmembrane protein, or a xenogeneic homolog thereof, coupled to or administered with an  
5 carrier protein effective to break tolerance to the transmembrane protein and a  
6 pharmaceutically acceptable adjuvant.

2           2.     The method of claim 1, wherein the transmembrane protein is selected  
3 from the group consisting of CD20, Her2-neu, VEGF receptor, epidermal growth factor  
4 receptor, the CD19 molecule, interleukin-2-receptor, interleukin-4-receptor, and the P-  
glycoprotein.

1           3.     The method of claim 1, wherein the transmembrane protein is CD20.

1           4.     The method of claim 1, wherein the vaccine composition comprises a  
2 peptide having the sequence given by Seq. ID No 1 or 2.

1           5.     The method claim 1, wherein the carrier protein is keyhole limpet  
2 hemocyanin.

1           6.     The method of claim 5, wherein the transmembrane protein is selected  
2 from the group consisting of CD20, Her2-neu, VEGF receptor, epidermal growth factor  
3 receptor, the CD19 molecule, interleukin-2-receptor, interleukin-4-receptor, and the P-  
4 glycoprotein.

1           7.     The method of claim 5, wherein the transmembrane protein is CD20.

1 8. The method of claim 7, wherein the vaccine composition comprises a  
2 peptide having the sequence given by Seq. ID No 1 or 2.

1 9. A method for active vaccination against B cells expressing CD20  
2 comprising administering to a patient a vaccine composition comprising at least an  
3 immunogenic portion of the extracellular domain of CD20, or a xenogeneic homolog thereof,  
4 coupled to or administered with an carrier protein effective to break tolerance to the  
5 transmembrane protein and a pharmaceutically acceptable adjuvant.

10. The method claim 9, wherein the carrier protein is keyhole limpet  
hemocyanin.

11. The method of claim 9, wherein the vaccine composition comprises a  
peptide having the sequence given by Seq. ID No 1 or 2.

12. A method for treatment of B cell non-Hodgkin's lymphoma,  
comprising administering to a patient suffering from B cell non-Hodgkin's lymphoma a  
vaccine composition comprising at least an immunogenic portion of the extracellular domain  
of CD20, or a xenogeneic homolog thereof, coupled to or administered with an carrier protein  
effective to break tolerance to the transmembrane protein and a pharmaceutically acceptable  
adjuvant.

13. A vaccine composition comprising at least an immunogenic portion of  
the extracellular domain of the transmembrane protein, or a xenogeneic homolog thereof,  
coupled to or administered with an carrier protein effective to break tolerance to the  
transmembrane protein and a pharmaceutically acceptable adjuvant.

14. The composition of claim 13, wherein the transmembrane protein is  
selected from the group consisting of CD20, Her2-neu, VEGF receptor, epidermal growth

- 15 -

3 factor receptor, the CD19 molecule, interleukin-2-receptor, interleukin-4-receptor, and the  
4 P-glycoprotein.

1 15. The composition of claim 13, wherein the transmembrane protein is  
2 CD20.

3 16. The composition of claim 15, wherein the vaccine composition  
4 comprises a peptide having the sequence given by Seq. ID No 1 or 2.

1 17. The composition of claim 13, wherein the carrier protein is keyhole  
2 limpet hemocyanin.

1 18. The composition of claim 17, wherein the transmembrane protein is  
2 selected from the group consisting of CD20, Her2-neu, VEGF receptor, epidermal growth  
3 factor receptor, the CD19 molecule, interleukin-2-receptor, interleukin-4-receptor, and the P-  
4 glycoprotein.

1 19. The composition of claim 17, wherein the transmembrane protein is  
2 CD20.

1 20. The composition of claim 19, wherein the vaccine composition  
2 comprises a peptide having the sequence given by Seq. ID No 1 or 2.